



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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GOVERNOR

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SECRETARY

**North Carolina Board of Transportation
Environmental Planning and Policy Committee
Meeting Minutes for November 1, 2006**

A meeting of the Environmental Planning and Policy Committee (EPPC) was held November 1, 2006 at 9:00 AM in the Board Room (Room 150) of the Transportation Building. Board Member Nina Szlosberg chaired the meeting. Board of Transportation members that attended were:

Tom Betts
Conrad Burrell
Bob Collier
Marion Cowell
Nancy Dunn
Doug Galyon

Arnold Lakey
Cam McRae
Andy Perkins
Nina Szlosberg
Lanny Wilson

Other attendees included:

Betsy Bailey
David Bender
Wally Bowman
Donnie Brew
Roberto Canales
Denise Choy
Scott Conklin
Tammye Davis
Steve Dewitt
Missy Dickens
David Farren
Mark Foster
Larry Goode
Carl Goode
Ricky Greene
Wib Gulley

Jennifer Harris
Phil Harris
Suntemple Helgren
Julie Hunkins
Sig Hutchinson
Pat Ivey
Berry Jenkins
Tim Johnson
David Joyner
Lori Kroll
Neil Lassiter
Don Lee
Bill Malley
Art McMillan
Ehren Meister
Mike Mills

Barry Moose
Sandy Nance
Beth Neeley
Ken Pace
Ellis Powell
Grady Rankin
Ed Regan
Michael Replogle
Amy Simes
Lyndo Tippet
Don Voelker
Barbara Weigel
Marcus Wilner
Shelly Winters

Ms. Szlosberg called the meeting to order and circulated the attendance sheet. Ms. Szlosberg accepted a motion to approve the meeting minutes from the August 2006 committee meeting. The minutes were approved as presented.

Ms. Szlosberg began by thanking everyone for attending and stated how excited she was about the agenda. She then thanked Senator Gully for passing legislation giving DOT the authority to create a toll authority. She indicated that we now have the opportunity to do something innovative and progressive. People all over the country and the world are looking at how the environment has degraded and we have opportunities to fix some of the problems. The two speakers on the agenda are among the leading experts in the area of how we manage tolling to improve the environment and manage congestion.

Ms. Szlosburg asked Mr. David Joyner from NCTA to say a few words before introducing the speakers. Mr. Joyner talked about how transit and tolling can work together and said he was excited about the synergy generated between the groups. Mr. Joyner stated that he was working very hard to get projects off the ground with no money because of the great deal of debt. The main focus of the toll authority is on repayment of debt. There is a great amount of innovative things going on throughout the country, especially in San Diego. They did a sensitivity study there that examines what we can and cannot do when starting specific programs, and how care must be taken in implementing the options available.

Mr. Joyner introduces Mr. Ed Regan, Senior Vice President of Wilber Smith, and consultant for NC Turnpike Authority. Mr. Regan has done the preliminary traffic and revenue studies on the Western Wake Parkway, the Gaston Parkway, and in Monroe.

Mr. Regan began by stating that the use of tolls has become increasingly popular throughout the United States. This is due to the fact that there is a growing shortage of transportation funding from traditional sources, in addition to the need to manage demand and congestion. He noted that most of the new projects are based in urban areas, especially in high growth areas. He mentioned how the use of Electronic Toll Collection (ETC) reduces cost and increases efficiency and that the wave of the future is a system that is fully cash-less or open road tolling. In new urban toll-ways, electronic tolling comprises more than 75% of the total tolling system. In addition, the use of variable tolling is increasingly being considered to encourage the use of electronic tolling and help better manage demand during peak periods. There is also great potential for transit synergy such as increasing Bus Rapid Transit (BRT) operations, park and ride facilities at interchanges, and increasing carpool incentives.

Mr. Regan then discussed some projects currently underway. He first discussed the SR -125 South Toll-Way in San Diego, which uses Time of Day Pricing, and Distance Based Tolling for ETC traffic, in addition to negotiating BRT future use agreements. Mr. Regan then gave an overview of the Inter-County Connector Project in Washington DC. This is an 18-mile urban connector north of Washington that will also use Open Road Tolling, in addition to electronic and video tolling. Video Tolling is a system where a camera takes a picture on a car's license plate and electronically charges the driver a toll fee. They will also use a system of variable tolls by time of day to help in their commitment to manage demand through pricing. The next project discussed was Houston's Westpark Toll-way, which is a fully electronic 15-mile toll-way that was opened in 2004. Mr. Regan indicated that traffic volume has already exceeded the demand forecast, and that there is peak period congestion in some areas. To help eliminate congestion, there is a plan to implement variable tolls in 2007. He explained that some options that are available are the use of High Occupancy Tolling (HOT) and Managed Lanes Facilities where

tolls are charged on only a portion of the lanes. In addition to using fully electronic tolling, the use of highly variable tolls by time of day, and direction of travel HOV traffic is discounted or free in HOT lanes. He indicates that using HOT and BRT is a win-win situation. In 1992 the SR-91 Express Lane opened and was the worlds first managed lanes project that used highly variable tolls. Toll prices ranged from \$1.00 to \$8.00 for the 10-mile trip. Express lanes comprised of one-third of capacity and processed 40-50% of peak period vehicles. The I-15 Managed Lanes Project is an 8-mile reversible HOV roadway in San Diego that was converted to a HOT. This was the first use of Dynamic Pricing where toll prices could change up to every 6 minutes. These revenues can be used to subsidize express bus service. Looking at the I-10 toll lanes as part of the expansion of Katy Freeway in Houston, the center lanes will be variably priced. Due to a public partnership agreement with local agencies there will be a virtual bus way for BRT operation which means that tolls will always be set to keep lanes free flowing, with BRT operations having free access to lanes, and direct connections to BRT stations. The capital cost (\$20 million) can be recovered from tolls on cars buying their way out of congestion. The LBJ Freeway Managed Lanes are 21 miles of new lanes, part of which is constructed underground and uses variable pricing to manage demand. There are also three direct connections with light rail transfer points.

The North Carolina projects currently under study are mostly urban toll-ways or bridges. They are the Triangle Turnpike, Gaston East-West Connector, Monroe Connector and Bypass, Cape Fear Skyway, and the Mid-Currituck Bridge Project. The NC Turnpike Authority is now beginning an Investment Grade Study of Triangle Turnpike (Western Wake and Triangle Parkways). Additional managed lane projects that may be looked at in the future are the various corridors of I-40 in the Charlotte area. The Triangle Turnpike is the first project to move to Investment Grade Study. This will allow new access to RTP and other employment sites. Preliminary studies show strong revenue potential, but additional funding will be needed. In considering transit options and impacts on Triangle Turnpike, some initiatives to be considered are: BRT operations on toll-ways, possible park and ride lots, discounts for organized vanpools, discounts for HOV traffic, and future rail lines on the corridor with the focus being on traffic and revenue impacts. In keeping balance, the project is not fully self-supporting and therefore unlikely to have revenue surpluses in the early years to support transit; however, it may be possible in later years after revenues reach higher levels. Mr. Regan also noted that some transit strategies might have a negative impact on toll revenues. An example is HOV discounts. He indicated that by using Demand Management Pricing we can likely enhance revenue and keep roadways free flowing. Some key challenges will be to develop an integrated mobility solution without jeopardizing our ability to finance the project. It might require that we delay some initiatives until certain revenue thresholds are reached in the future or increased financial subsidies from other sources are secured to offset negative revenue impacts. Mr. Regan concluded by stating that we should build and operate smart roads which maximize mobility and maximize the use of electronic toll collection to minimize delays and pollution due to toll stops.

Ms. Szlosberg then introduced Michael Replogle from Environmental Defense who presented information on Tolls and Public Partnerships.

Mr. Replogle began by stating that the key question is, “How do we want to use road pricing to build more roads faster -- to manage traffic, manage congestion, and finance public transportation and to improve opportunities for people to walk, and bike, and get around with less impact on our environment, and make the whole system work better for everyone. Do we want to do some combination of all of them?” The reality is that when we use tolls to build more lanes, the impacts on the environment and transportation equity in access to jobs and public facilities is going to be negative and we must take that into account. Mr. Replogle then stated that we can utilize tolls and private partnerships in a variety of ways. We must be very purposeful in thinking the process through and know exactly what we want to get out of it. For instance, do we want to just expand the system, or do we want to just focus on the objective that we want to achieve? Do we want to reduce congestion while supporting mobility? In protecting the environment, we can use these strategies to do just that. There are a whole lot of things driving the traffic growth in North Carolina, and growth and population is just a piece of that. The fact that we are growing the population in North Carolina cities and counties is not the main factor. More people are taking longer trips and switching from ride sharing and carpools to riding solo. So as we think about how we can implement increased transportation investment, we are going to be contributing more to this induced traffic growth. We are going to be giving people the right signals to help us manage growth. The big impacts in transportation is on sprawl, natural environment, water and air quality, habitat, and air pollution -- especially things that can cause health problems. In addition to the problems with climate that has been getting more attention due to global warming, which is affecting our eco-system, fisheries, and wildlife.

Mr. Replogle then indicated that the federal government has just passed a new transportation law. One of the sleeper provisions in that law that hasn't gotten too much attention is language in the bill that basically supports better mobility for people while minimizing fuel use and emissions. We have to achieve all these simultaneously which is a daunting asset management goal. In fact, there are a lot of planning strategies available to do that. We have to put together a bundle of things -- better rapid transit, better traffic operations system management, congestion charges, and things like that. There is no magic bullet and we have to deal with a number of strategies, like contracting for performance and looking at how we can use the public private partnership to help get it done.

There was a study that was done just this year by a professor at University of California Davis, who looked at 40 different metro areas in the world that have used complex computer models and alternative transportation land use strategies for the past 20-30 years. A synthesis from those studies of over 40 regions in the U.S and Europe showed that there were some things that really worked to get better system performance and others that didn't work so well. If we simply want to grow a region, the most cost-effective way to get the least congestion and the best environmental performance is to cluster jobs and houses around an expanded public transportation network to minimize the amount of road expansion. If we simply expand roads and public transportation together and don't price and manage the system, we end up with costly transit systems that don't work well, cost a lot, and can't give us the performance we need. We end up with more traffic congestion and sprawl. In addition, Mr. Replogle stressed the need to look at how we tax fuel, how we utilize free parking spaces at work, and how we use tolls in the system. He stated that there are also some strategies that work against effective system

performance. If we use tolls to build more roadways, we will increase sprawl and traffic, with fewer opportunities for walking or biking.

There was a recent study released in September 2006 in the Washington Metro Area that looked at a network of High Occupancy Vehicle (HOV) lanes. A 600-mile network was being considered for a potential additional long-range transportation plan, with about two-thirds of those lane miles of new HOT lanes being new lanes added to the system, with the other one-third of the lanes to be converted from HOV lanes. Regional planners looked at what would the toll level per mile needed in to be in the system to keep those lanes free flowing. In most cases, there's two lanes in each direction. What's scary in this study is that in order to keep those toll lanes, you will have some free lanes next to toll lanes. Another possibility is to toll manage the entire system, both the existing lanes and the new lanes. The toll cost would be a whole lot lower to actually get congestion free conditions. Overall the cost of the system would be lower and you would get a lot of traffic management benefits and also generate more revenue to pay for mass transit and develop a high performance transportation network.

There was a study done by Patrick Sousa who used a model based on the Operate – Design – Build - Operate structure. This is a good sketch modeling tool to look at the tolling statute. The study showed that building new toll roads and lanes may provide short term congestion relief and spur more traffic growth but will not fix the roads already in place. Maryland DOT is proposing to add one toll managed lane in each direction on the Capital Beltway just north of Washington, DC, while upgrading an existing lane in each direction to a toll managed lane, rather than just adding new toll lanes. Some states like Oregon are looking to take their transportation asset management efforts beyond the pavement, integrating it with safety, traffic and transit operations, and system planning and management, including land use and natural resources.

Mr. Replogle referenced the Inter-County Connector that was mentioned earlier in the committee meeting. This is a proposed 3-billion dollar outer beltway piece running for about 18 miles north of Washington, DC. A set of studies have been done to find what would happen if they built the connector as compared to doing nothing. They then looked at tolling existing lanes on existing motor ways on the end points and developing rapid transit connections along those existing roadways. Planners found that if this outer beltway were built as a toll road, there would be an increase greenhouse gas emissions by 5% throughout the entire DC Metro region. On the other hand, if a transit orientated development alternative was utilized that uses tolls to better manage the existing lanes on the existing motorways, and use it to fund better transit, greenhouse gasses could be reduced by 6% over the region. The transit-orientated investment gives you more congestion relief.

When we take these lessons and step into the idea of how do we use public private partnerships to solve our problems, and deliver performance for our communities, a whole set of questions come up. There's a paper that is available on-line at [www.environmental defense. org/go/high performance networks.](http://www.environmentaldefense.org/go/high_performance_networks) The paper deals with some of these questions. How long should these agreement concessions be? How can we align them with our planning goals? What's the role of non-compete agreements (toll rate caps)? Should there be a public equity statement in some of these projects? We need environmental performance standards and agreements as part of the

public private partnership concessions to make sure these things are about more than just making roads, but about delivering performance on the environment. How much transparency and oversight do we have in the process before the contracts get signed?

In considering the options there are some models we can to other parts of the world. In England, the Darrington to Dishforth Highway uses the concept called a Congestion Management Payment. The payment to the concessionaire who built the toll road is based on not just the traffic flow, but how much of that flow actually travels above a certain speed. If the road gets congested and it's not operating above its rated capacity, the concessionaire gets no money for that traffic. If the concessionaire can operate the facility above 60km/hr and above the rated capacity, they can earn a bonus for high performance operation at that facility. Why not extend this kind of approach to other public private partnerships transportation corridor concessions and compensate concessionaires? It's not how much traffic they move but how many people and how many ton/ miles gets moved while meeting a speed standard or a level of service standard. It's something the private sector can make money on. If they can move more people it becomes cheaper for the private sector concessionaire operating and delivering transportation services, and capacity in a corridor. In addition we could add new express bus services, and work with employers to give parking incentives and van pool services. Is it cheaper to do those things than add a new lane to the roadway? Why not create an incentive for that outcome. Pay for performance and adjust the payment if there's pollution violations that damage public health. Or if there is more of a certain violation that's not been remedied, then make sure there's a financial penalty. If that continues to accumulate, you can make that a breach of contract. These are the kinds of approaches that are beginning to be used in projects like the British Columbia Sea to Sky Highway.

Mr. Replogle pointed to an area that was touched on by Mr. Regan. There is a basic engineering function being used called Volume Delay, Speed Delay Function. The function indicates that in the morning at about 6:00am, vehicle traffic flows at a rate of about 60mph with 600 vehicles per hour per lane. Traffic then builds at about 7:30-8:00 a.m., as the speed and throughput drops. Congestion peaks to about 1800-2000 vehicles per hour per lane. Traffic then slows to stop and go conditions with the average vehicle speed falling to 20 mph and 1000 vehicles per lane per hour. As the day goes on traffic throughput again increases to less congested conditions. Why don't we extend this model to existing motor ways? Rather than building new motorway lanes, why not look at the fact that for every two managed lanes we carry more traffic. If we upgrade existing motor lanes to toll-managed lanes and high performance corridors, we can actually get more throughput at a lot less cost. We can compliment this with a lot of different strategies such as Pay-As-You-Drive Insurance and cash in lieu of parking techniques. Bus and rapid transit services that link together a host of things that make the system more efficient like using Dynamic Ride Matching Services, a technique to match riders travel schedules with their neighbors. We can use ramp metering which can be linked to congestion charging and signal re-timing. There is a host of engineering strategies that we have begun to use but not always in a systematic way. We can also use some of the revenues to fund rapid incident management. Create an incentive for private-sector contractors to make sure accidents get cleared out in five minutes instead of 20 minutes, so they only cause 15 minutes of delay instead of an hour.

Mr. Replogle suggested that it's more effective to provide short-term operations and management concessions up-front to get the private sectors entrepreneurial energies focused on operating and managing the existing lanes to deliver performance rather than creating public-private partnerships concession leases that run for 75 –99 years to build a project. He suggested that we introduce a congestion charge upstream of bottlenecks and make sure we have new van and bus services in place. In addition, we should consider introducing rush hour shoulder lanes so that everyone gets something out of this. Have the toll rate set by the concessionaire to deliver traffic performance, but don't let the concessionaire keep the tolls to maximize profit. Have the toll revenues go to a public fund that can be used to manage traffic and deliver better services. Compensate the concessionaire based on performance.

Some skeptics have indicated that we can't toll existing lanes because the people would revolt. Mr. Replogle stated that there are more than half a dozen cities around the world that have tolls on existing lanes with initial public dissent. Stockholm is an example of this. There was a 52% voter approval at the ballot box for congestion charges to continue because it delivered congestion relief and better travel choices. Looking at the Stockholm experience, the key was that they delivered better bus services, new park and ride lots, and better rail services. They got a lot better transit ridership that made the system work better and reduced overall traffic and air emissions. This was a win-win situation. This same experience has been replicated in London, Singapore, and other cities. The Bush administration has a new congestion initiative that's working with local and state officials encouraging pilot projects here in America to produce the same kinds of results and adapt this experience to our political and cultural content.

Mr. Replogle closed his presentation by talking briefly about how we have the opportunity for a win in tolls and private partnerships if we include environmental and community concessions into performance agreements. This can be a new means of environmental compliance requirements by guaranteeing that we are going to meet certain environmental goals. We can show the private sectors involved that we want corporate responsibility pledges -- by making sure the community has a way of holding the project managers accountable to goals rather than having an environmental impact study that just sits on somebody's shelf. We have a model of this at the Los Angeles International Airport (LAX). A half billion-dollar deal that basically funded this project for expanding LAX went forward without litigation. You had 26 neighborhood and civic groups working together to support the project that included them as stakeholders. There's a guarantee the environmental performance, transparency, and ongoing monitoring of those provisions to help fund noise-proof schools and make sure clean vehicles and equipment are used. Construction and operations help impact job training and enhance environmental performance standards. These approaches can be used in North Carolina to make sure that as we look at new projects and public-private partnerships, they will become a path to better environmental performance that exceeds federal and state standards. Why do we have to settle for simply saying these deals are going to do the minimal? It is now possible to turn transportation into a greener industry that's brings health and environmental benefits by paying attention to stewardship for the whole system -- not just manage individual projects, but stewardship and asset management for the whole system.

So the concession deals and the contract shouldn't have clauses that say after a year you should show an environmental management plan that's meeting the federal requirements, but rather

focus on what we want to achieve for the environment and design public private partnerships for performance. Mr. Replogle stated that he thinks that we can move this to a win-win strategy that helps us manage sprawl, traffic growth, and congestion. It's good both for the environment and the economy.

Ms. Szlosburg thanked Mr. Replogle and stated that it's really not about "if" – it's about "how". She stated that as policy makers, we have to look at more than our own responsibilities. We have to look to higher goals. This includes things like environmental impacts and quality of life issues because we are accountable for that as well.

The meeting adjourned at 10:04 a.m.

JH/md